

SERVICE MANUAL



EW610ST/EX610ST/EW605ST/EX605ST

Date	Revise Version	Description
2010.7.15	V1.0	Initial Issue
2010.10.6	V2.0	Add EW605ST/EX605ST

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Preface

This manual is applied to EW610ST/EX610ST/EW605ST/EX605ST projection system. The manual gives you a brief description of basic technical information to help in service and maintain the product.

Your customers will appreciate the quick response time when you immediately identify problems that occur with our products. We expect your customers will appreciate the service that you offer them.

This manual is for technicians and people who have an electronic background. Please send the product back to the distributor for repairing and do not attempt to do anything that is complex or not mentioned in the troubleshooting.

Notice:

The information found in this manual is subject to change without prior notice. Any subsequent changes made to the data herein will be incorporated in future edition.

EW610ST/EX610ST/EW605ST/EX605ST Service Manual

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Manual Version 2.0

EW610ST/EX610ST/EW605ST/EX605ST Comparison List

Parts	EW610ST	EX610ST	EW605ST	EX605ST
Engine Module	70.8JA17GR01	70.8JB06GR01	70.8JA17GR01	70.8JB06GR01
Rear Cover Module	70.8JA18GR01	70.8JB07GR01	70.8JA22GR01	70.8JB09GR01
ROD Module	70.8JA21GR01	70.8JB08GR01	70.8JA21GR01	70.8JB08GR01
DMD	48.8EJ01G001	48.8CQ01G003	48.8EJ01G001	48.8CQ01G003
Main BD	80.8JA01G001	80.8JB01G001	80.8JA01G011	80.8JB01G011
Audio Daughter BD	80.8GL06G001	80.8GL06G001	N/A	N/A
Lan BD	80.8JA08G001	80.8JA08G001	N/A	N/A
Speaker	49.8EF01G002	49.8EF01G002	49.87K01G201	49.87K01G201

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Appendix A Exploded Image I

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Introduction

1-1 Highlight

No	Item	Description
1	Dimensions (WxDxH)	• 306x243x113.5mm
2	Power Supply	• Universal AC 100V-240V±10% 50-60Hz
3	Power Consumption	• Normal:TYP 295W MAX 325W @110VAC±10% • ECO:TYP 250W MAX 275W @110VAC±10%
4	Keystone correction	• +/-40 degree is the scaler spec. • +/-12 degree is for system angle of V-keystone
5	Throw ratio	• 0.52 (D/W) @ 87"(EW610ST/EW605ST) • 0.626 (D/W) @ 77"(EX610ST/EX605ST)
6	Projection lens	• YM37L(EW610ST/EW605ST) • YM23L(EX610ST/EX605ST)
7	Lamp life	Normal Mode: • 2500 Hours Standard @ 230W, 50% Survival Rate ECO Mode: • 4000 Hours Typical @ 190W, 50% Survival Rate
8	Lamp	• 230W Lamp (Osram E20.8)
9	DMD Chip&Number of active dots	• 0.65" WXGA, S450, Dark Chip 3(EW610ST/EW605ST) • 0.55" XGA, S450, Dark Chip 3(EX610ST/EX605ST) • Number of active dots:1280x800 (EW610ST/EW605ST) 1024x768(EX610ST/EX605ST)
10	Color wheel	• 6 segments (R81Y41G84C31W52B71)
11	System controller	• TI DDP 2431
12	Video compatibility	• NTSC: M (3.58MHz), 4.43 MHz • PAL: B, D, G, H, I, M, N • SECAM: B, D, G, K, K1, L • HDTV: 480i/p, 576i/p, 720p(50/60Hz), 1080i/p(50/60Hz)
13	Input signal spec	• VGA-in x2 • Composite Video x1 • S-Video(Mini DIN) x1 • RCA Audio in x1(R&L)(EX610ST/EW610ST) • Audio input(Phone Jack) x1 • Microphone x1 (EX610ST/EW610ST) • HDMI v1.3(compatible with video and audio) (EX610ST/EW610ST)

No	Item	Description
14	Altitude&Temperature	<ul style="list-style-type: none"> Operating: 0~2,500 ft 5°C~35°C 2,500~5,000 ft 5°C~30°C 5,000~10,000 ft 5°C~25°C

1-2 Compatible Mode

Computer Compatibility

Compatibility	Resolution	V-Sync [Hz]		H-Sync [KHz]	
		Analog	Digital	Analog	Digital
VGA	640x350	70	70	31.50	31.50
	640x350	85	85	37.90	37.90
	640x400	85	85	37.90	37.90
	640x480	60	60	31.50	31.50
	640x480	67	67	-	-
	640x480	72	72	37.90	37.90
	640x480	75	75	37.50	37.50
	720x400	70	70	31.50	31.50
	720x400	85	85	37.90	37.90
SVGA	800x600	56	56	35.20	35.20
	800x600	60	60	37.90	37.90
	800x600	72	72	48.10	48.10
	800x600	75	75	46.90	46.90
	800x600	120	120	-	-
	832x624	75	75	-	-
XGA	1024x768	60	60	48.40	48.40
	1024x768	70	70	56.50	56.50
	1024x768	75	75	60.00	60.00
	1024x768	120	120	-	-
	1152x870	75	75	-	-
WXGA	1280x800	60	60	49.68	49.64
SXGA	1280x1024	60	60	63.98	63.98
UXGA	1600x1200	60	60	75.00	75.00
WSXGA+ (*)	1680x1050	60	60	65.00	65.00
HD	1280x720	60	60	45.00	45.00

Compatibility	Resolution	V-Sync [Hz]		H-Sync [KHz]	
		Analog	Digital	Analog	Digital
HD	1280x720	120	120	-	-
HD	1920x1080	30	30	33.80	33.80
MAC LC 13"	640x480	66.66		34.98	
MAC II 13"	640 x 480	66.68		35.00	
MAC 16"	832x624	74.55		49.73	
MAC 19"	1024X768	75		60.24	
MAC	1152X870	75.06		68.68	
MAC G4	640X480	60		31.35	
i MAC DV	1024X768	75		60.00	
i MAC DV	1152X870	75		68.49	

Note: If the Computer Compatibility supportive signal is different from User's Manual, please refer to User's Manual.

Disassembly Process

2-1 Equipment Needed & Product Overview

1. Screw Bit (+): 105
2. Screw Bit (+): 107
3. Screw Bit (-): 107
4. Hex Sleeves: 5 mm
5. Tweezers
6. Projector

** Before you start: This process is protective level II. Operators should wear electrostatic chains.*

** Note: - If you need to replace the main board, you have to record the lamp usage hour.*

- Some related contents please refer to common SM chapter 2.



2-2 Repair notice

2-2-1 Disassemble Front Cover Module

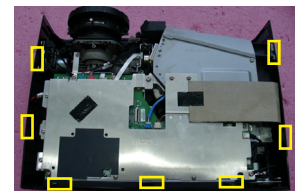
- 1.You should disassemble front cover first before disassemble the top cover .
- 2.Unscrew 3 screws (as red circle) to disassemble front cover Module.
- 3.Disassembled front cover module.



2-2-2 Disassemble Top Cover Module

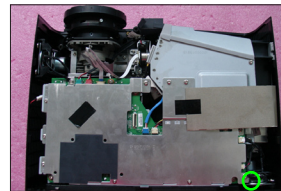
1. Unscrew 2 screws (as red circle) from bottom cover.
2. Unscrew 2 screws (as blue circle) from rear cover to disassemble top cover module.

Note:When you disassemble the top cover, please pay attention to the tenons(as yellow square).



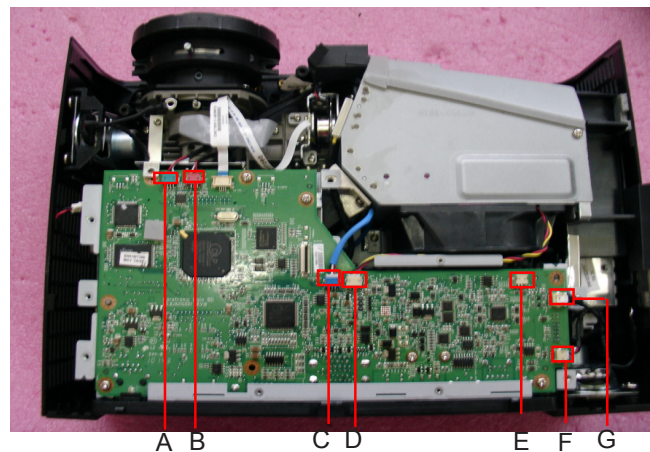
2-2-3 Disassemble Rear Cover Module

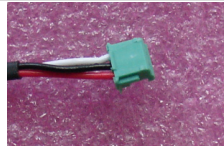
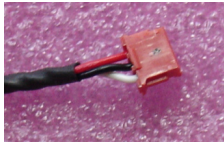
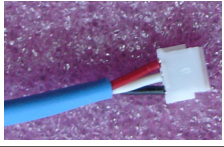

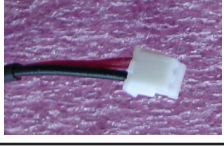
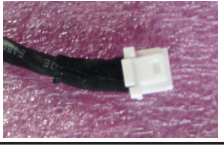
1. Unscrew 2 screws (as red circle) from Bottom Cover.
2. Unscrew 1 screw (as green circle) from main board.
3. Unscrew 6 hex screws (as blue circle) from rear Cover .
4. Disassembled rear cover module.



2-2-4 Disassemble Main Board

1. Please refer to the below table details of each connector on Main Board.



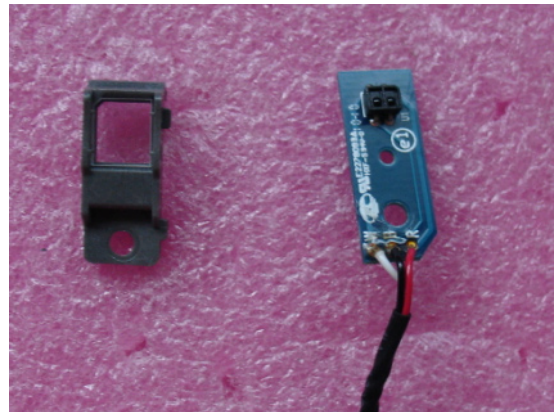
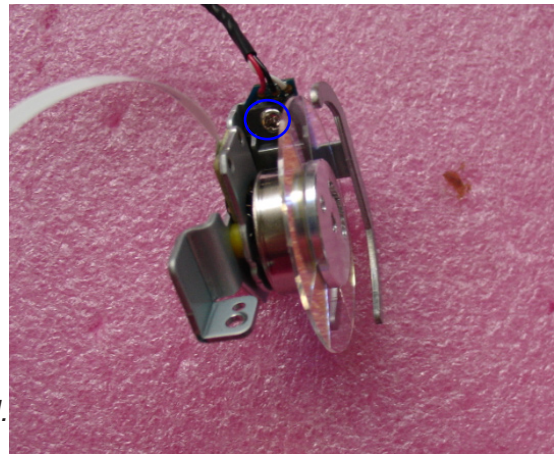
Item	Male Connector on Main Board	The key feature	Figure
A	IR	Compose of Red/Black/White Wire (3 pin) and green connector	
B	Photo Sensor	Compose of Red/Black/White Wire (3 pin) and red connector	
C	Blower	Compose of Red/White/Black Wire (3 pin) and blue wire tube	
D	Fan	Compose of Red/White/Black Wire (3 pin) and black wire tube	
E&F	Speaker	Compose of Red/Black Wire (2 pin)	
G	Lamp	Black wire tube (5 pin)	

Note: There is only one speaker for EW605ST&EX605ST, the corresponding item is "F".

2-2-5 Disassemble Photo sensor and Photo sensor holder

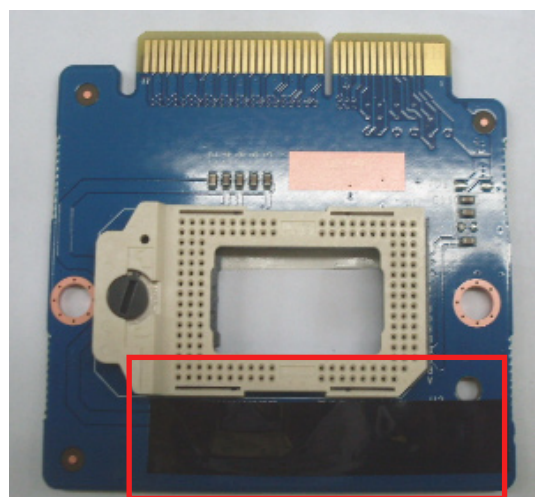
Unscrew 1 screw (as blue circle) to disassemble the Photo Sensor Board and Photo Sensor holder from the Color Wheel Module.

Note: - Avoid touching the glass parts of the color wheel.



2-2-6 Disassemble DMD Board

After replacing DMD board, please paste the EMI mylar as picture show.



2-3 Rod Adjustment

1. Environment Adjustment

- The distance between the engine and the screen is 0.98M.
- This process should be done at a dark environment (under 10 Lux).

2. Procedure Adjustment

- Change the screen to "white screen".
- Adjust the screws by using the rod on the engine module to readjust the image.

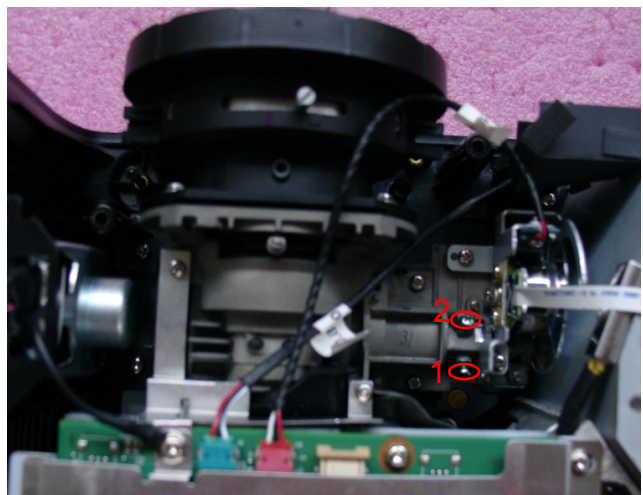
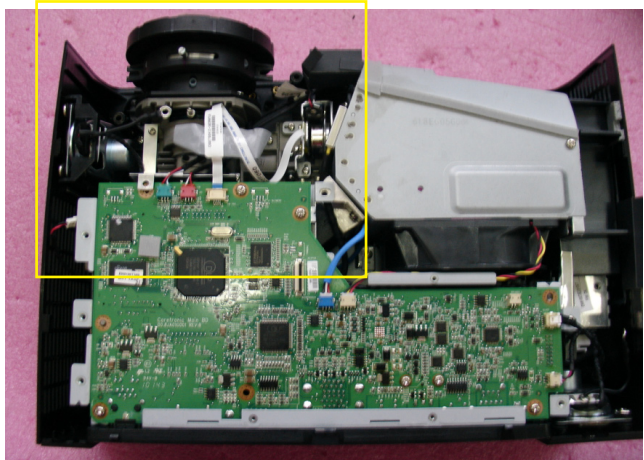
("screw 1" should be adjusted first, and then "screw 2". Adjust until the yellowish or bluish parts disappeared.)

3. Abnormal image inspection

- It should not have any abnormal color at the rim of the image by estimating through the eyes.

Note: - To avoid over adjusting the rod.

- *After the operation, please use the glue to fix the screws.*



2-4 Re-write Lamp Usage Hour

1. Get into service mode

- Press Power --> Left --> Left-->Menu to get into service mode.

2. Re-write Lamp Hour-Normal

- Use "Up" or "Down" key to select "Lamp Hours (Normal)".
- Use "Left" or "Right" key to re-write the lamp hour-Normal.

3. Re-write Lamp Hour-ECO

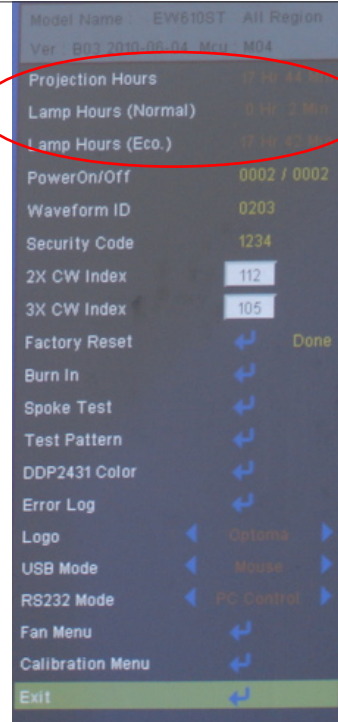
- Use "Up" or "Down" key to select "Lamp Hours (Eco)".
- Use "Left" or "Right" key to re-write the lamp hour-ECO.

4. Re-write Projection Hours

- Use "Up" or "Down" key to select "Projection Hours".
- Use "Left" or "Right" key to re-write the projection hours.

5. Choose "Exit", press "Enter" to exit service mode.

*Note: Left key = decrease lamp hour
Right key=increase lamp hour*



Troubleshooting


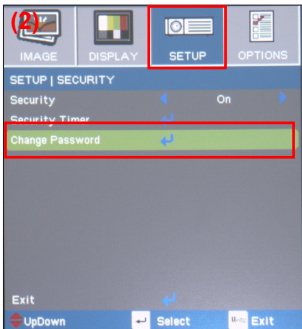
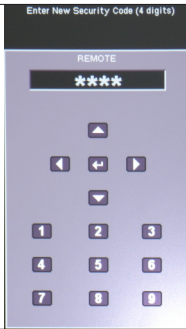
3-1 LED Lighting Message For Projector

Message	Power LED		LED	
	Green	Amber	TEMP (Red)	LAMP (Red)
Standby State (Input power code)	OFF	ON	OFF	OFF
Power on(Warming)	Flashing	OFF	OFF	OFF
Lamp lighting	ON	OFF	OFF	OFF
Power off (Cooling)	Flashing	OFF	OFF	OFF
Error (Over Temp.)	OFF	Flashing	ON	OFF
Error (Fan fail)	OFF	Flashing	Flashing	OFF
Error (Lamp fail)	OFF	Flashing	OFF	ON

3-3 Main Procedure

The other troubleshooting procedures please refer to common service manual 3-1(Main Procedure).

No	Symptom	Procedure
1	Auto Shut Down	<ul style="list-style-type: none">- Ensure the projector is not put on a soft pad and the air vent is not blocked.- a. Lamp Fail: Power LED (flashes amber), Lamp LED (lights red)<ul style="list-style-type: none">- Check Lamp- Check Lamp Driver- Check Main Board- b. Over Temp: Power LED (flashes amber), Temp LED (lights red)<ul style="list-style-type: none">- Check Fan- Check Main Board- Check thermal switch- c. Fan Fail: Power LED (flashes amber), Temp LED (flashes red)<ul style="list-style-type: none">- Check Fan- Check Main Board
2	3D Image Abnormal	<ul style="list-style-type: none">- Ensure the using 3D glasses is good and you must face the projection.- Ensure the CD in DVD is HQFS format or the graphic card from PC can support 3D format.- Ensure your standing distance is less than 6m from screen.- Ensure the 3D function is on and execute "3D sync invert" in OSD menu.- Check main board.

No	Symptom	Procedure
3	Forget Projector Password	<p>- If you forget the Password, please do the following steps to get the Universal Password:</p> <p>(1) When you turn on the projector, the message "Enter Security Code" appears. Please Input the "Current Security Code 8642" by Remote Control, then press "Enter".</p> <p>(2) Press "Menu" button, select "Setup", "Change Password", then press "Enter" button. The message "Enter Security Code" appears again, repeat step (1).</p> <p>(3) The message "Enter New Security Code" appears. Input a 4-digits code (letters and/or numbers) that you define.</p> <p>(4) To confirm, key in the password again. The "Security Code change successfully" appear on the screen.</p> <div data-bbox="644 996 946 1323"> <p>(1)</p>  </div> <div data-bbox="1058 996 1361 1323"> <p>(2)</p>  </div> <div data-bbox="644 1368 946 1695"> <p>(3)</p>  </div>

Function Test & Alignment Procedure

4-1 Service Mode Instruction (This section links to common service manual 4-2 Service Mode)

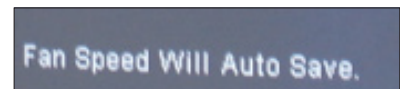
1. Turn on the projector.
2. Press Power --> Left --> Left --> Menu on Keypad or Remote controller.
3. Service mode will be shown. After confirming the configuration, press "Exit" to exit.

4-2 Factory Fan RPM Reset

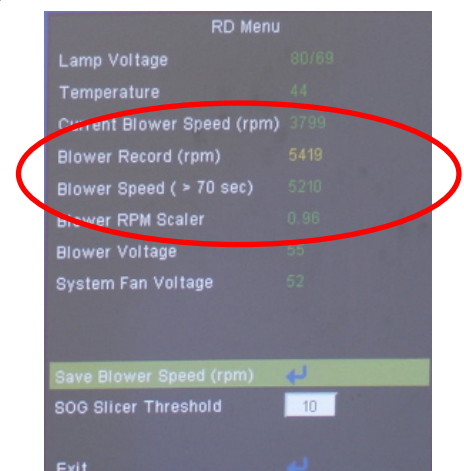
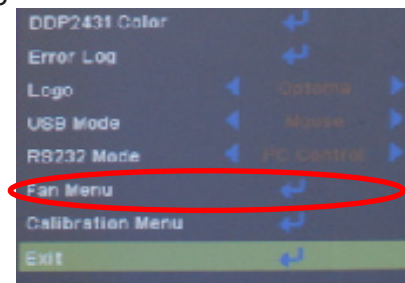
After replace main board,blower or upgrade system FW, you need to do:

1. Plug in the power cord, power on the projector, when the "logo" disappear, to press "Power", "Left", "Left" and "right" button in sequence, then Picture A will be shown.
2. After several minutes, you can check the fan RPM as red circle a. Please get into Service Mode.
 - a. Please get into Service Mode.
 - b. Select "Fan menu", then press "Enter", Fan detail information will be shown.

Note: If the factory fan Value don't show in service mode,please repeat the step 1,2 again.



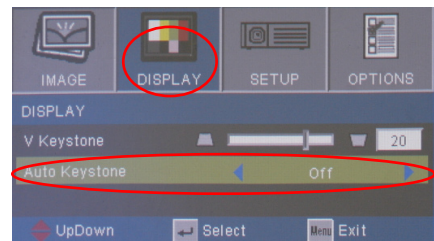
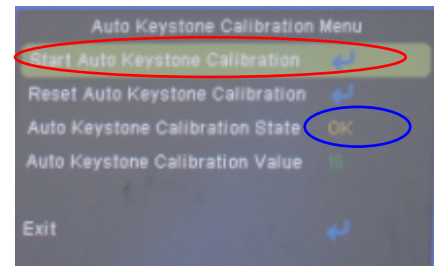
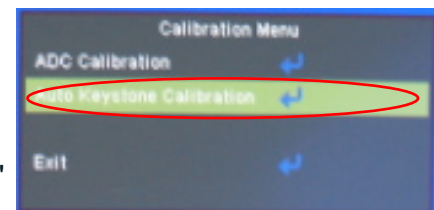
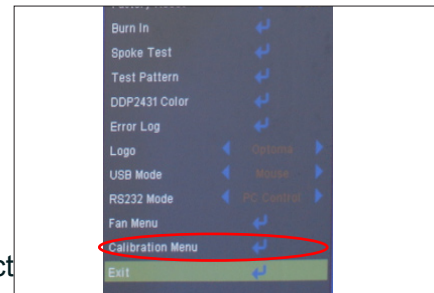
Picture A



4-3 Keystone Calibration

After replace main board, you need to do:

1. Turn on the projector and ensure the position of the projector is horizontal.
2. Press Power --> Left --> Left --> Menu on keypad or Remote controller.
3. Select "Calibration Menu", press "Enter" on keypad , then select "Auto Keystone Calibration,press "Enter" on keypad , select "start Auto Keystone Calibration", when "Auto Keystone Calibration State" is "OK"(as blue circle) ,the Keystone Calibration has been finished.
4. If you want to check the keystone function,please press "menu" on keypad,select "Auto keystone on",then lift up the projector to an angle about 12° of horizontal position, after about 3 seconds , then keystone can be automatically adjusted.



4-4 Test Condition **(This section links to common service manual 4-4 Test Condition)**

Defect specification table

For EX610ST/EX605ST

Order	Symptom	Pattern	Criteria
1	Bright pixel (dots)	Gray 10 pattern	$A+B=0$
2	Dark pixel(dots)	White pattern	$A+B\leq 4$
3	Unstable pixel (dots)	Any pattern	$A+B=0$
4	Adjacent dark pixel (dots)	Any pattern	$A+B=0$
5	Dark blemish (Dirty)	Blue 60 pattern	$A+B\leq 2$ (diameter <1/2 inch)
6	Bright blemish (Dirty)	Gray 10 pattern	$A+B\leq 2$ (diameter <1/2 inch)
7	Bright dots on frame	Gray 10 pattern	≤ 1

For EW610ST/EW605ST

Order	Symptom	Pattern	Criteria
1	Bright pixel (dots)	Gray 10 pattern	$A+B=0$
2	Dark pixel(dots)	White pattern	$A+B\leq 7$
3	Unstable pixel (dots)	Any pattern	$A+B=0$
4	Adjacent dark pixel (dots)	Any pattern	$A+B=0$
5	Dark blemish (Dirty)	Blue 60 pattern	$A+B\leq 4$ (diameter <1 inch)
6	Bright blemish (Dirty)	Gray 10 pattern	$A+B\leq 4$ (diameter <1 inch)
7	Bright dots on frame	Gray 10 pattern	≤ 1

4-5 Test Inspection Procedure

Update	Change Parts						
	Main Board	FW	Color wheel	Lamp module	Engine module	Rod module	Blower
Version Update	V	V					
Color Wheel Index	V		V				
Lamp reset				V			
ADC Calibration	V						
Keystone Calibration	V						
OSD Reset	V	V					
Re-write Lamp Hour Usage	V						
EDID	V						
ROD Adjustment					V	V	
Factory Fan RPM Reset	V	V					V

4-6 PC MODE

Note:EW610ST/EW605ST, the native resolution of test signal is 1280x800@60HZ.

EX610ST/EX605ST, the native resolution of test signal is 1024x768@60HZ.

We take EW610ST for example here.

The other contents please refer to common service manual 4-6 PC MODE.

1. Bright pixel

Procedure

- Test equipment: video generator.
- Test signal: analog 1280x800@60Hz.
- Test Pattern: Gray 10

Inspection item

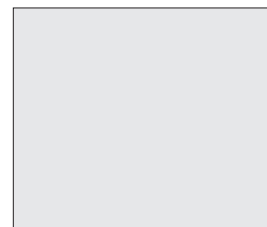
- Bright pixel check.

Criteria

- Bright pixel is unacceptable under gray 10 pattern.

Please refer to the figure in 4-3 Test Condition for Frame and Active area.

Note: The defect criteria follows TI specification.



Gray 10

2. Dark pixel

Procedure

- Test equipment: video generator.
- Test signal: analog 1280x800@60Hz.
- Test Pattern: White pattern

Inspection item

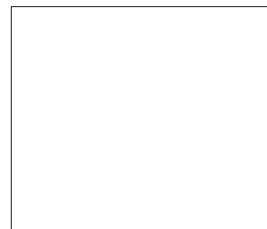
- Dark pixels check.
- White pattern
- Adjacent dark pixel.

Criteria

- The number of the dead pixels should be less or equal to 7 pixels.

- Adjacent pixel with each other is unacceptable.

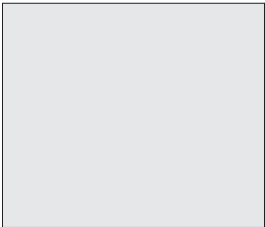
Note: The defect criteria follows TI specification.



White pattern

3. Bright Blemish

- | | |
|-----------------|--|
| Procedure | - Test equipment: video generator |
| | - Test signal: 1280x800 @60Hz |
| | - Test Pattern: Gray 10 |
| Inspection item | - Bright blemish check |
| Criteria | - The bright blemish should be less or equal to 4 under gray 10 pattern. |
| | - Ref. Defect specification table |



Gray 10

4. Dark Blemish

- | | |
|-----------------|--|
| Procedure | - Test equipment: video generator |
| | - Test signal: 1280x800 @60Hz |
| | - Test Pattern: Blue 60 |
| Inspection item | - Dark blemish check |
| Criteria | - The dark blemish should be less or equal to 4 under blue 60 pattern. |
| | - Ref. Defect specification table |



Blue 60

4-7 Calibration

ADC Calibration

Procedure	<ul style="list-style-type: none">- Test equipment: video generator- Once Main Board is changed, PC calibration should be done as well.(1) Test signal: analog 1280x800@60Hz (for EW610ST/EW605ST) analog 1024x768@60Hz (for EX610ST/EX605ST)(2) Test Pattern: White/Black <p>- <i>Note:</i></p> <ul style="list-style-type: none">(1) <i>Calibration pattern should be in full screen mode.</i>(2) <i>Please refer to 4-1 Guide to get into service mode, then get into “ADC/DEC color”, and choose “PC Calibration”.</i>
Inspection item	<ul style="list-style-type: none">- Check if there is lines on the screen.- Check if there is noise on the screen.- Horizontal and vertical position of the video should be adjustable to the screen frame.
Criteria	<ul style="list-style-type: none">- If there is noise on the screen, the product is considered as failure product.- The screen appears normal, it shouldn't appear any abnormal condition, such as lines and so on.- Check if the projection is the same as monitor displayed.

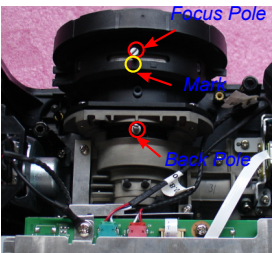


White/Black

4-8 Engine Adjustment

Note: - This step must be done only when engine is changed.

- Procedure
- Test equipment: video generator.
 - Test signal:analog 1280x800@60Hz
(EW610ST/EW605ST)
analog 1024x768@60Hz
(EX610ST/EX605ST)
 - Test Pattern: Full Screen
 - Test distance: 98cm
 - Push Focus Pole align to the position where has a mark.
 - Adjust Back Pole to let the entire image clear, crisp and sharp, then fix the Back Pole with glue.



- Inspection item
- Check the focus under the pattern of Full Screen by the distance of 98cm.
 - If focus is unacceptable, please readjust the Back Pole again under the distance of 98cm.
(Blur words on one of the corner after adjustment is acceptable. However, the word should at least be recognizable.)

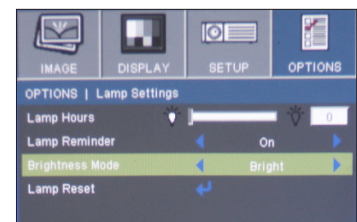
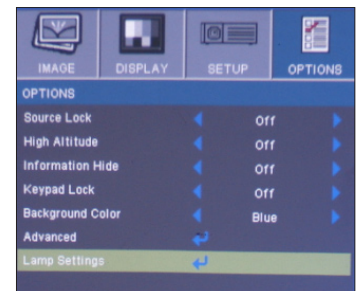


Full Screen

4-9 Optical Performance Measure

1. Measure setting

- Procedure
- Please get into OSD menu, select "Image AI off" under "Image", then select "Lamp Setting" under "Options", press "Enter" button, then select "Bright" mode.
 - Test equipment: video generator.
 - Test signal: analog 1280x800@60Hz (EW610ST/EW605ST)
analog 1024x768@60Hz (EX610ST/EX605ST)



2. Brightness

Criteria: 900 ANSI Lumens

3. Contrast

Criteria: 1600:1

4. Uniformity

Criteria: 65%

Note: The other contents please refer to common service manual 4-8 Optical Performance Measure.

4-10 3D Function Test

- Procedure
- Test equipment: PC with 3D display card, DLP 3D goggles and 3D player software Or DVD player.
 - Test signal: 3D Format movie (for PC)
HQFS format CD (for DVD)
- Inspection item
- 3D test with 120Hz VGA port (for PC)
3D test with 480i Video/S-video or 60Hz HDMI (for DVD)
- Inspection Distance
- < 6M
- Criteria
- The image should not appear noise, flicker, shadow, shocking, abnormal color.

Note: For PC, 3D function only supports 800x600@120Hz, 1024x768@120Hz and 1280x720@120Hz PC signal.

4-11 Network Function Test

Note:EW605ST&EX605ST do not have Lan Board,so the Network Function Test is only for EW610ST&EX610ST.

1. Write Down Projector IP

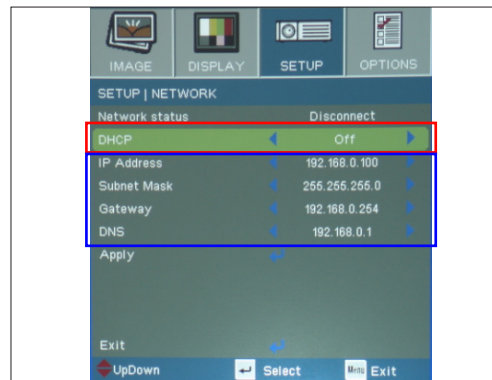
(1) Turn on the Projector, then press "Menu" button to get into OSD Mode.

- Use "right" button to select "SETUP".
- Use "down" button to remove the light mark to "RS232", then press "Enter" button to select "Network", press "Enter" button.

(2) Select "Network", press "Enter" button.

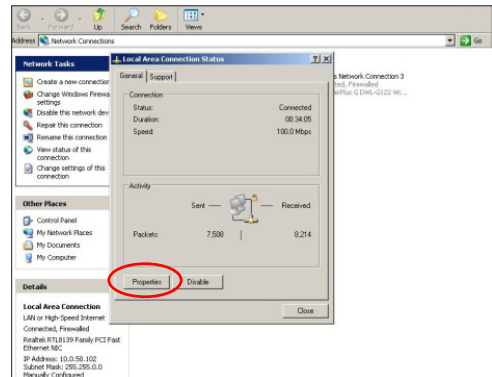
(3) Remove the light mark to "DHCP", then press "Enter" button to select "Off", press "Enter" button.

- The IP address will be shown on screen.
- Write down the IP address: 192.168.0.100.
- Ensure the IP address, Subnet Mask, Gateway and DNS are right as the the picture shown.

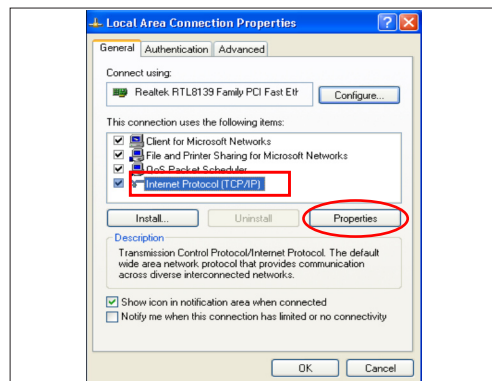


2. Network Setting

(1) Open the "Local area connection", choose "properties".

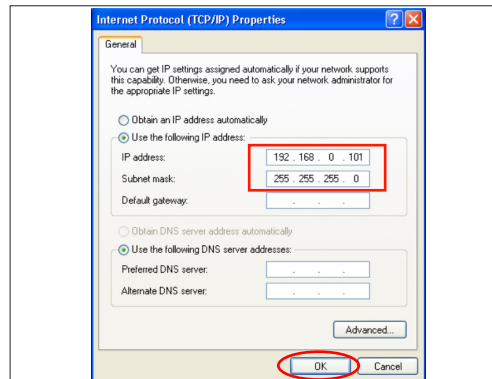


(2) Select "Internet protocol (TCP/IP)", then click "Properties".



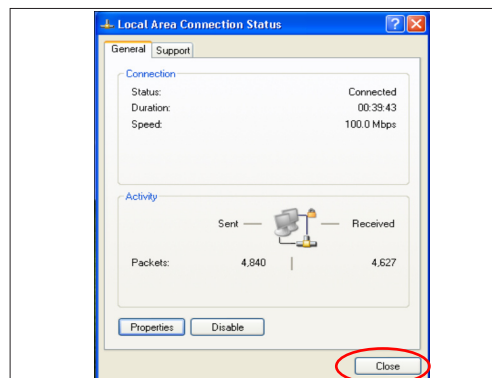
(3) Modify the IP address to 192.168.0.101, and modify Subnet mask to 255.255.255.0.

Note: - The HOST ID (192.168.0.XXX) of PC IP address must be different from the projector IP address written down in step 1 of 4-11.



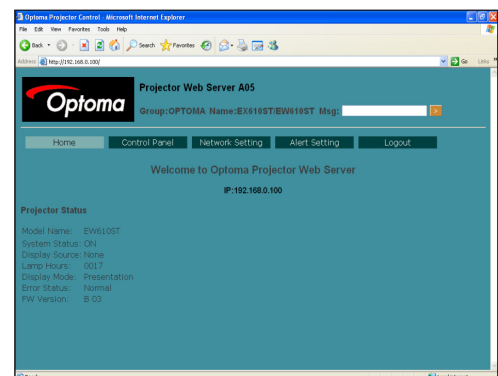
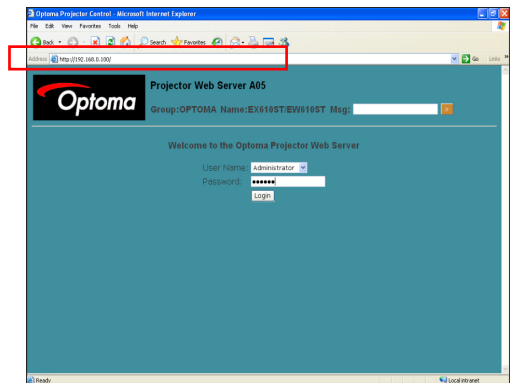
(4) Click "OK".

(5) Click "Close" to quit the setting screen.



3. Read Projector Information

- (1) Connect the PC and the Projector with LAN Cable.
- (2) Execute "Internet Explorer".
- (3) Visit the IP address: "http://192.168.0.100".
 - Key in "User Name: Administrator" and "Password: administrator", click "Login" to get into Projector Web Server.
- (4) Projector information will be shown on the screen.
 - Please check whether each item's function is OK.



Firmware Upgrade

Section 1: System Firmware Upgrade

5-1-1 Equipment Needed

Software: (DDP2431-USB)

- DLP Composer Lite V10.0
- Firmware (*.img)
- library (library 10.0)

Hardware:

- Projector
- Power Cord (42.50115G001)
- USB Cable mini USB to USB (A) (42.00284G001)
- PC or Laptop

Note1: we will show the hot key of service mode and how to check FW version, the other contents please refer to common service manual 5-1 .

Note2: During FW upgrade procedure, please select "32KB" in "Skip Boot Loader Area".

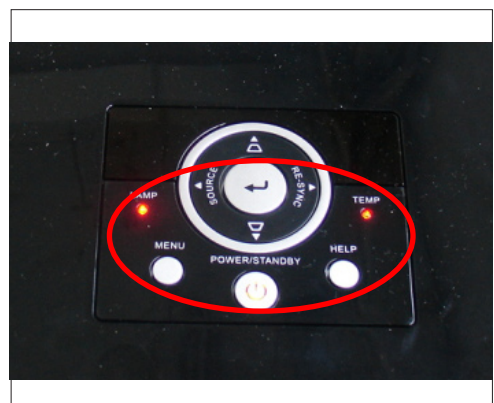


5-1-2 Get into FW mode

1. Get into Firmware mode

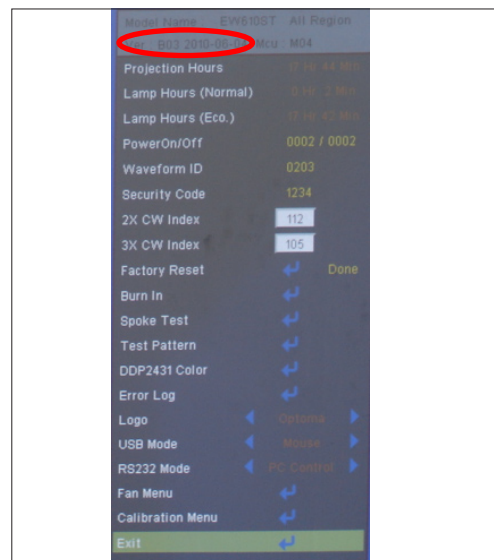
- Plug power cord into projector.
- Hold "menu" button.
- Connect the projector with PC by USB cable.

Note: - "Menu" button must be held until "Temp" and "Lamp" LED light on (as red circle).



5-1-3 Check FW version

1. Restart the unit and get into the Service Mode (Press Power --> Left --> Left --> Menu).
2. The firmware version will be shown as red circle on the screen.



Section 2: PIC FW Upgrade (RS-232)

5-2-1 Equipment Needed

Software and Hardware :

- EW610ST_Pic_FW.hex
- Power Cord (42.50115G001)
- RS232 Cable(DSUB(F)9-DIN(M)3) (42.83618G001)

Note: The FW upgrade procedure for EX610ST/EW605ST/EX605ST is the same as EW610ST, we take EW610ST as an example here.



5-2-2 PIC Firmware Upgrade Procedure

1. Set up

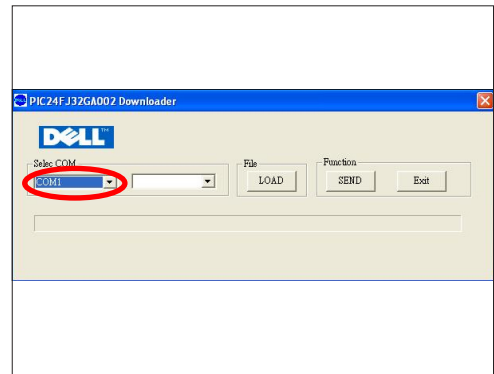
- Plug RS232 cable into the projector RS232 port.
- Hold the "Menu" button consistently and then plug in the power cable, Until lamp LED flashes orange,temp LED and power LED lights orange, then loosen the "Menu" button.



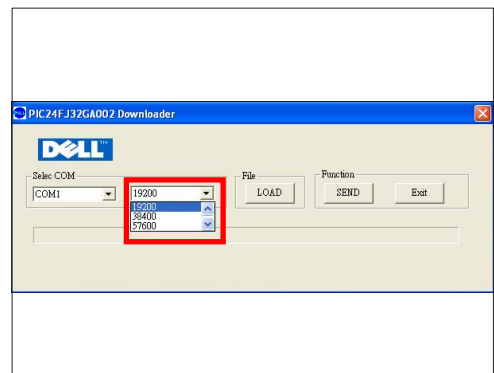
2. Execute the "PICGA002 Downloader"file.



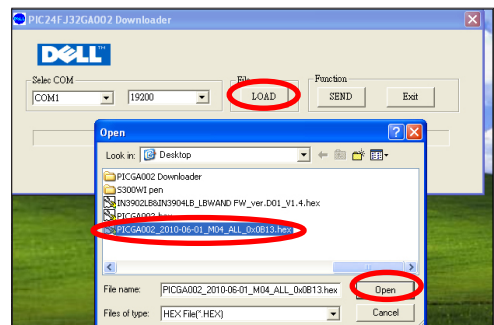
3. Select the COM Port which you are using.



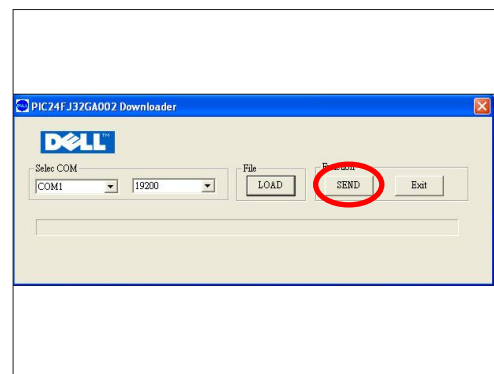
4. Select "19200".



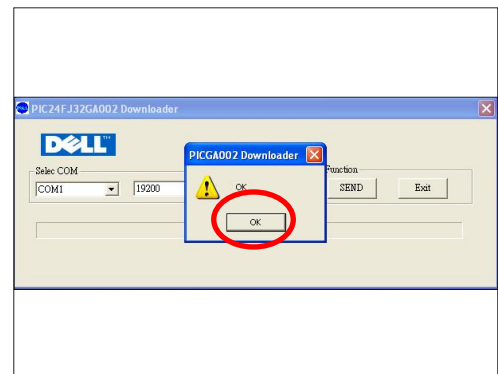
5. Click "LOAD" to search the PIC FW file.



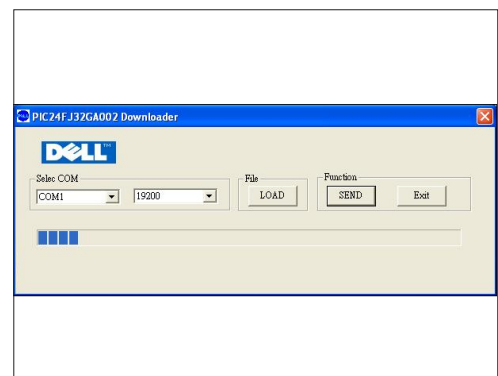
6. Click "SEND".



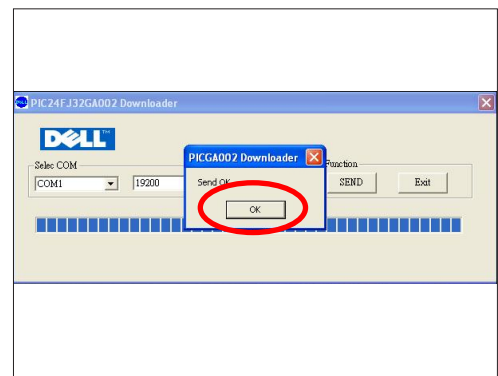
7. Click "OK".



8. The Firmware upgrade procedure will run automatically.

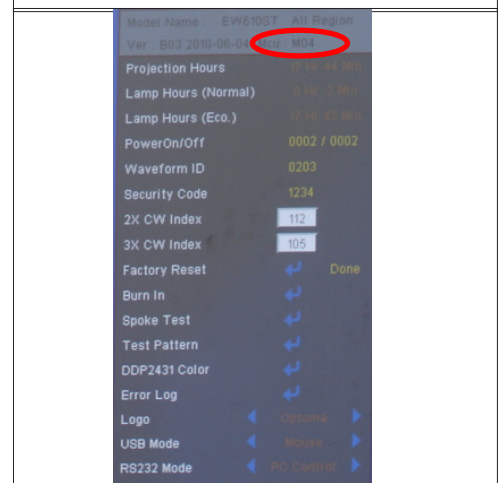


9. Click "OK", then close the window.



10. Restart the unit and get into the Service Mode (Press Power --> Left --> Left --> Menu).

The firmware version will be shown as red circle on the screen.



Section 3: Network FW Upgrade Procedure

5-3-1 Equipment Needed

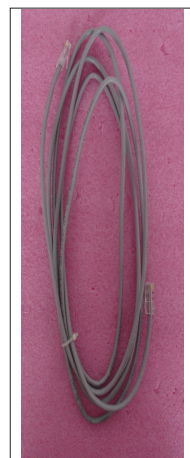
Software :

- Network firmware file (*.bin)

Hardware :

- Projector
- Power Cord (42.50115G001)
- LAN Cable
- PC

Note:EW605ST&EX605ST do not have Lan Board,so the Network FW Upgrade Procedure is only for EW610ST&EX610ST.



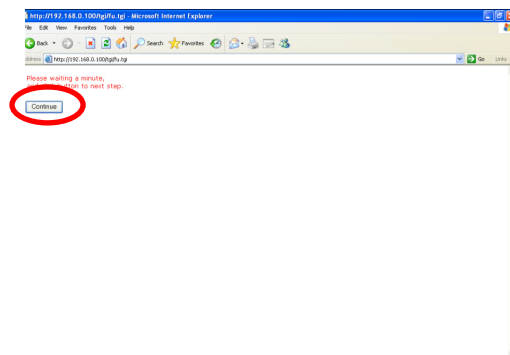
5-3-3 Network FW Upgrade Procedure

1. Projector & PC Setting

- (1) The Projector setting for Network FW upgrade, please refer to 4-11-1 for details.
- (2) The PC setting for Network FW upgrade, please refer to 4-11-2 for details.

2. Network FW Upgrade Procedure

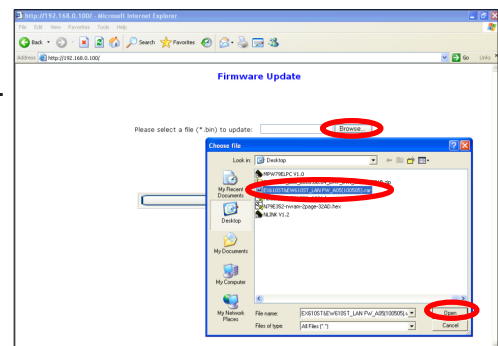
- (1). Execute "Internet Explorer" and visit "http://192.168.0.100/tgi/fu.tgi".



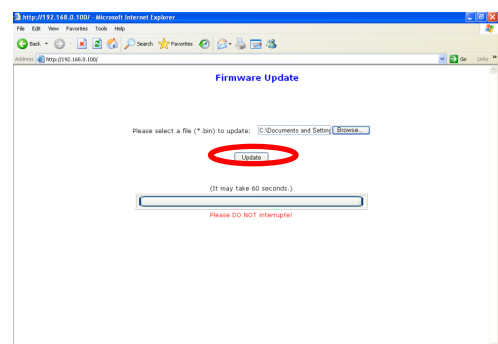
- (2). Click "Continue".

- (3). "Firmware Update" image will appear on the screen.

- Click "Browse" button to select the Network FW file (*.bin) which you saved.
- Click "Open".
- Click "Update" to start updating.



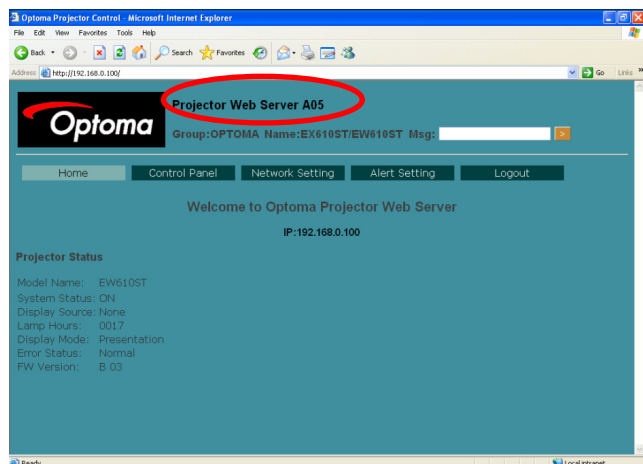
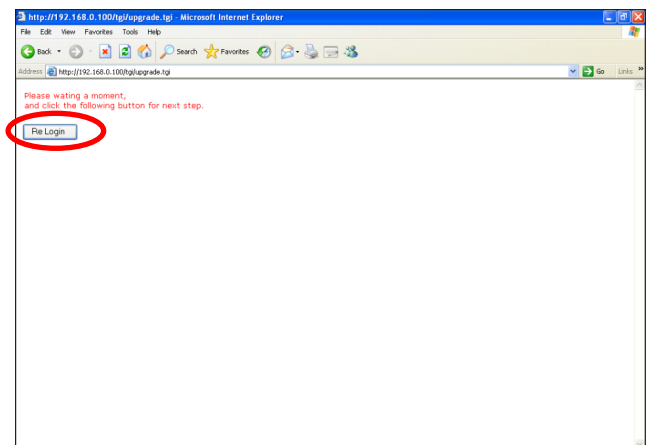
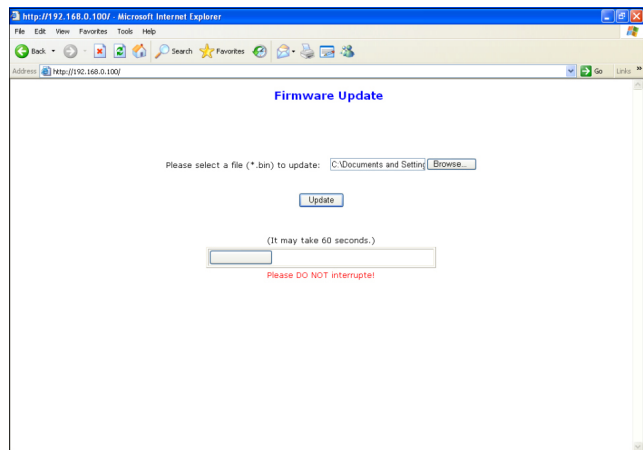
- (4). Firmware upgrade procedure.



(5). Click “Re Login”.

(6). Firmware upgrade procedure complete.

- Choose Firmware update and the Network FW version will appear.



EDID Upgrade

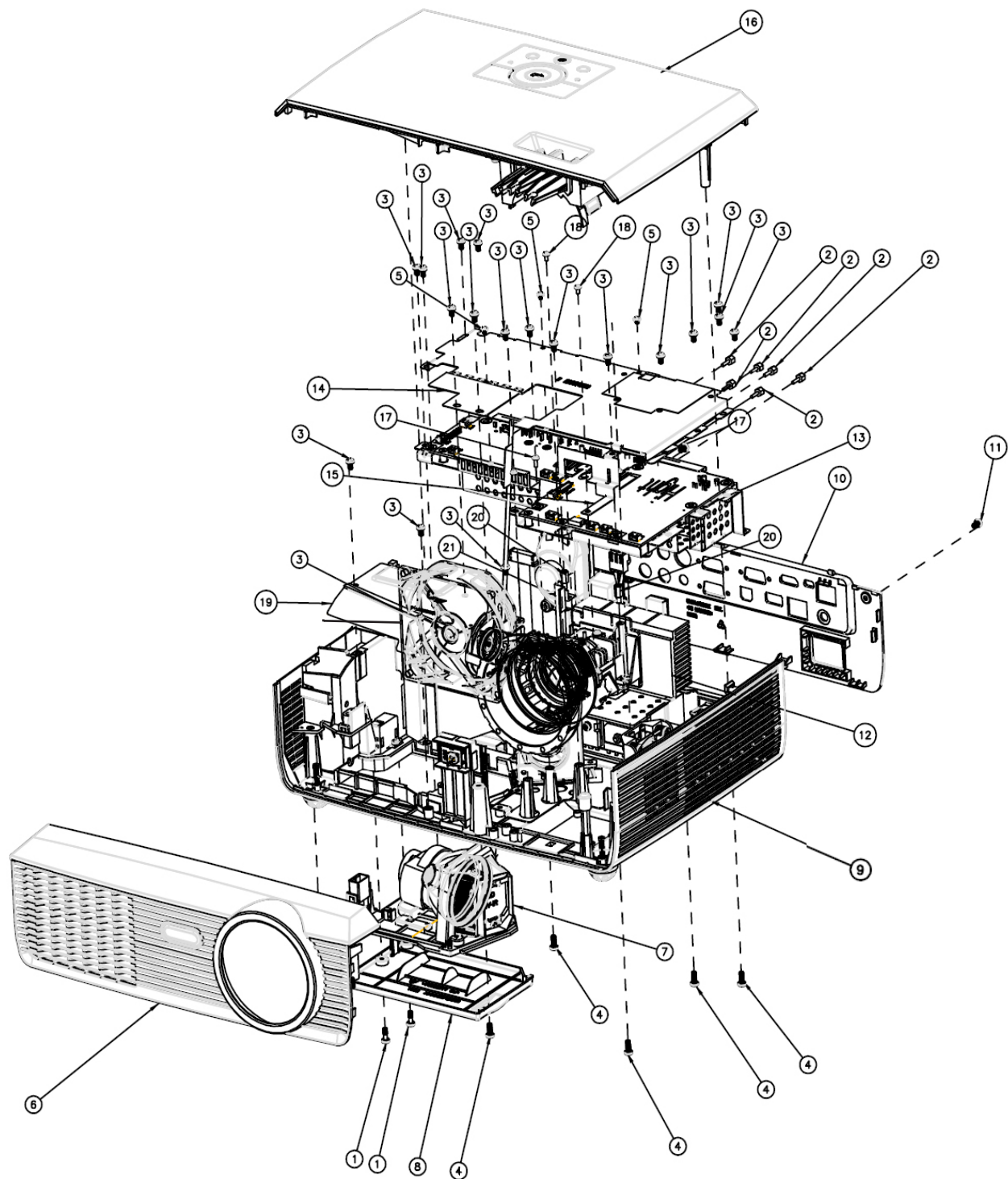
6-1 EDID Upgrade Procedure

- *The upgrade procedure for VGA and HDMI ports please refer to common service manual chapter 6.*

Appendix A (Exploded Image)

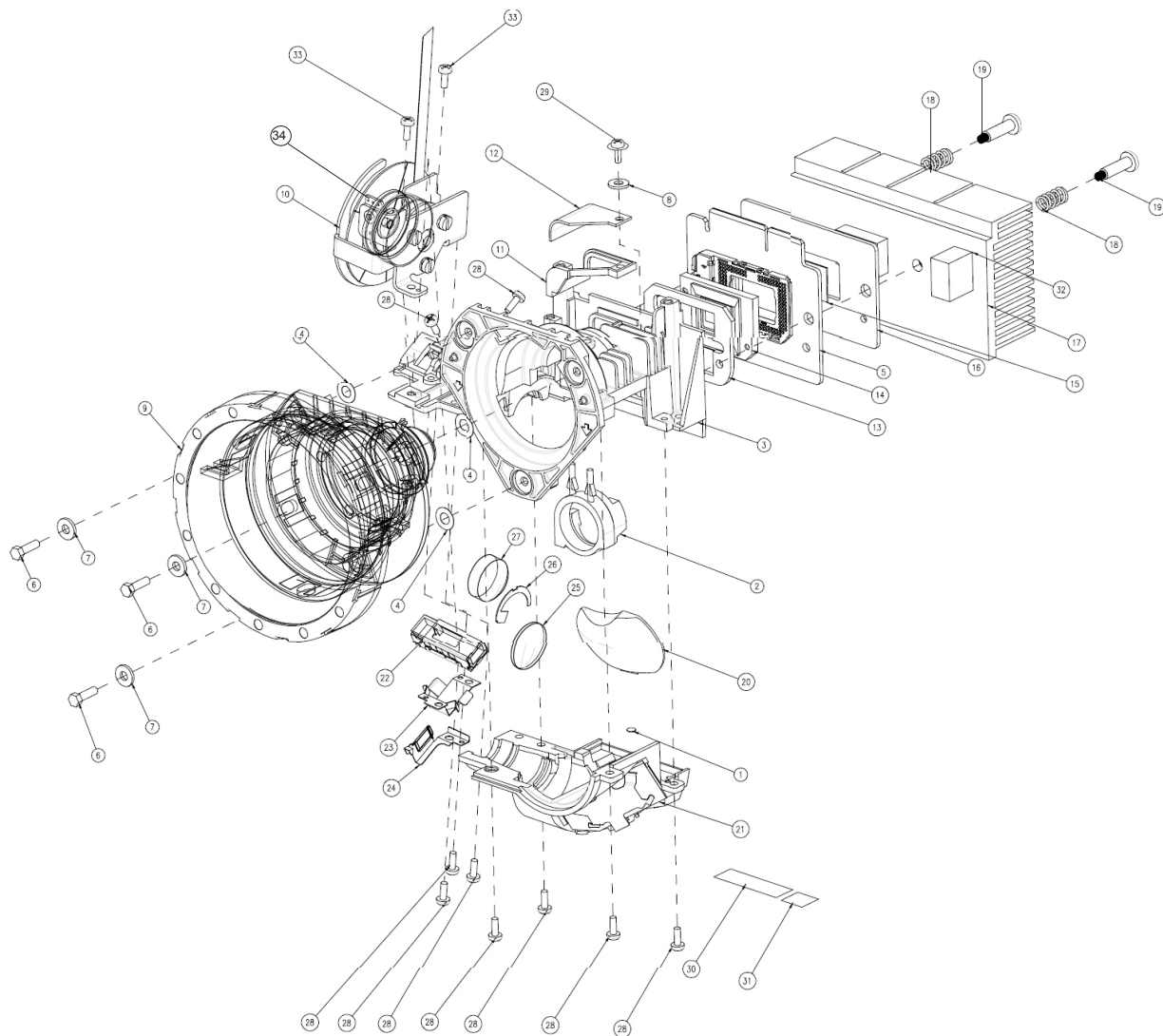
*Note: This chapter is only designed to show the exploded image of the projector.
For updated part numbers, please refer to RSPL report.*

DC



Item	PN	Description	Parts Supply
1	61.00018G003	LOCK SCREW PAN MECH M3*8.5-3.5 BLACK(1018+HEAT TREATMENT)	
2	85.005AGG408	SCREW HEX I/O #4-40 H4*L8 NI NYLOK	
3	85.1A123G050	SCREW PAN MECH M3*5 Ni	
4	85.1A323G060	SCREW PAN MECH M3*6 BLACK EzPro 500 GREEN	
5	85.1D122G030	SCREW PAN MECH M2*3 Ni(W/WSHER Ø5.0)	
6	51.8GL03H001	FRONT COVER PC GII for YM37L	V
	SP.8JA01GC01	LAMP MODULE FOR PROJECTOR EW610ST/ EX610ST	V
7	70.8JA06G001	ASSY LAMP MODULE EW610ST	
8	51.8GL05H001	LAMP COVER PC GII	
9	70.8JA10G001	ASSY BOTTOM COVER MODULE EW610ST	
10	70.8JA03G001	ASSY BACK COVER MODULE EW610ST	
11	85.1A323G050	SCREW PAN MFCH M3*5 BLACK	
	70.8JA17GR01	ASSY ENGINE MODULE FOR EW610ST(SERVICE)	V
12	70.8JA01G001	ASSY OPTICAL ENGINE MODULE EW610ST	
13	70.8JA05G001	ASSY M/B MODULE EW610ST	
14	70.8GL09G001	ASSY SYSTEM FAN MODULE S300W	
15	61.8EG14G001	EMI SPRING HD20	
16	70.8JA04G001	ASSY TOP COVER MODULE EW610ST	
17	85.1A526G060	SCREW PAN MECH M2.6*6 Ni NYLOK	
18	85.1A526G040	SCREW PAN MECH M2.6*4 Ni NYLOK	
19	49.8GL01G001	SUNON 8525 AXIAL FAN WITH LINE LENGTH 115MM	V
20	85.00823G080	HEX SCREW M3*H8*L5.3,BRASS	
21	51.8GL21G001	MYLAR ENGINE RIGHT FRPP S300W	

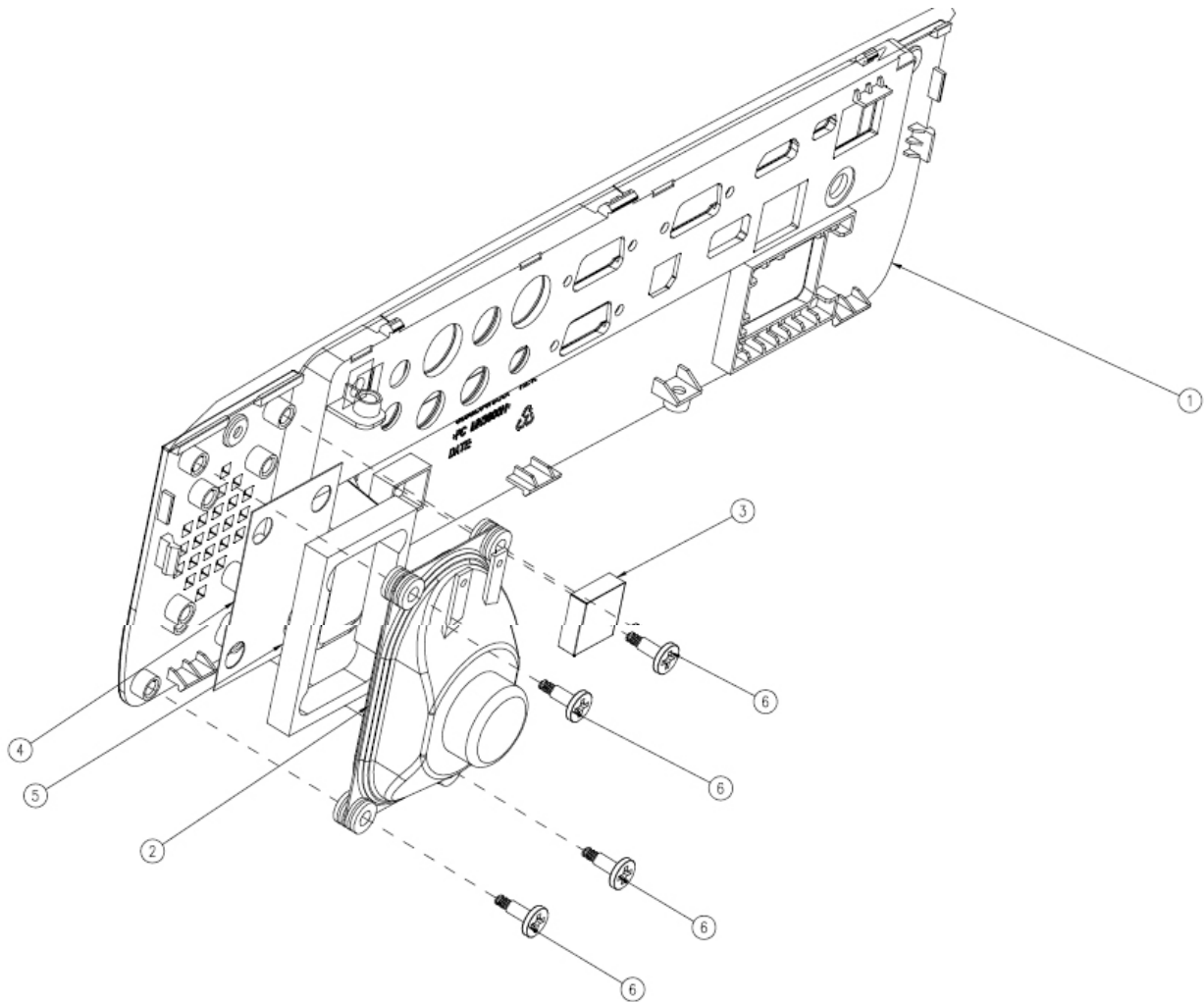
Assy Engine Module



Item	P/N	Description	Parts Supply
1	51.88N43G001	MYLAR FOR RELAY BOTTOM	
2	52.8CS09G001	LENS RUBBER YM39 Z15 PDG-DSU30	
3	61.8GL01G001	G2 Z15 ENGINE BASE WXGA 112 OFFSET	
4	61.8GL07H001	YM37L WASHER SUS301 T=0.01mm	
5	80.8EF02G001	PCBA DMD BD FOR X15-II XGA	V
6	85.60426G090	SCREW HEX ZN M2.6 L9MM	
7	87.FL030G006	WASHER FLAT W7.5*3.2*1.0tPC	
8	87.FL030G008	WASHER FLAT 7*3.1*0.8t PC PINGOOD WS-1M	
9	23.8GL01G002	YO_YM37L projection lens	
	70.8GP10GR01	ASSY COLOR WHEEL MODULE S300/ S300W(SERVICE)	V
10	70.8GL13G001	ASSY COLOR WHEEL MODULE S300W	
11	52.8AH02G001	OFFRAY-RUBBER-A15W SILICONE	
12	61.8AH12G001	OFF RAY PLATE M409WX	
13	52.8CP01G001	DMD RUBBER X1161	
14	48.8EJ01G001	0.65" WXGA 2xLVDS SERIES 450 DMD -8 TI 1280-603cB	V
15	52.8CP04G001	S450 0.55" XGA/SVGA DMD thermal pad, FUJIPOLY, Sarcon XR-HE, 18.4x12.5x0.5 mm	
16	52.8CP02G001	DMD BOARD RUBBER X1161	
17	61.8EF02G001	DMD HEATSINK AL6063 EX615	
18	61.8CP15H001	SPRING FOR DMD STEP SCREW X1161	
19	61.8CP16H001	STEP SCREW FOR DMD M2.6*16.2mm X1161	
20	70.8EG18G001	ASSY RELAY MODULE HD20	
21	70.8EF32G001	ASSY ENGINE BOTTOM COVER Z15II	
	70.8JA21GR01	ASSY ROD MODULE FOR EW610ST(SERVICE)	V
22	70.8JA02G001	ASSY ROD MODULE EW610ST	
23	61.8FF02G001	ROD SPRING FOR EW536	
24	61.8FF01G001	ROD COVER FOR EW536	
25	23.8AH20G012	YO CONDENSER 2 FOR A15W	
26	61.8EF03G001	CONDENSER LIGHT STOP EX615	

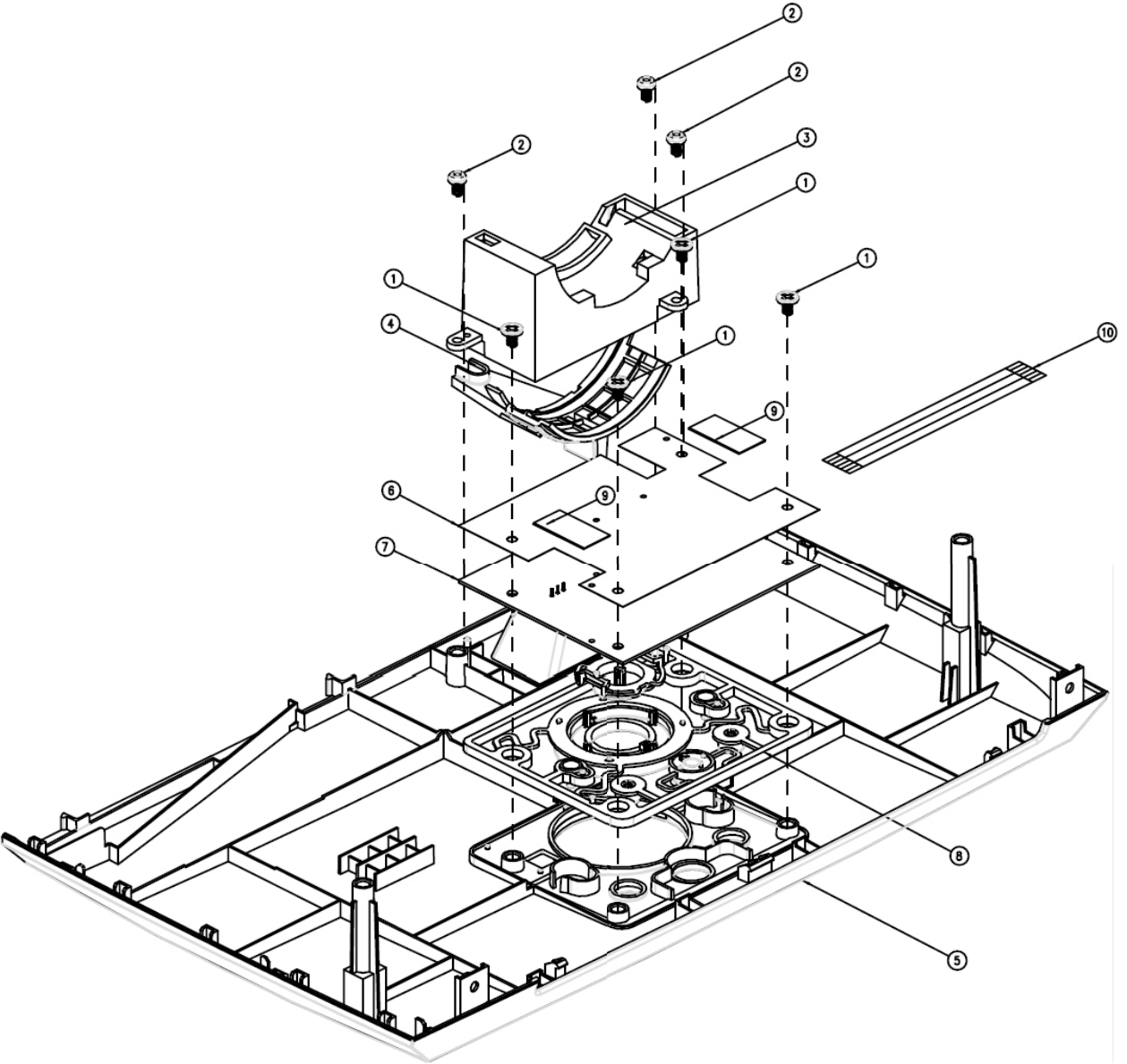
Item	P/N	Description	Parts Supply
27	23.8AH20G011	YO CONDENSER 1 FOR A15W	
28	85.1A526G060	SCREW PAN MECH M2.6*6 Ni NYLOK	
29	85.3A126G060	NEW SCREW M=2.6 D=2.48-2.58 L=6.0 2.0MM	
30	51.81540G001	TAPE 3M J350 17*60mm	
31	51.81542G001	TAPE 3M J350 17*15mm	
32	41.85Y01G001	EMI GASKET W12*H12*L27	
33	85.1A526G050	SCREW PAN MECH M2.6*5 Ni NYLOK	
34	80.87Y04G001	PCBA PHOTO SENSOR BOARD FOR PD7280	V

Assy Rear Cover Module



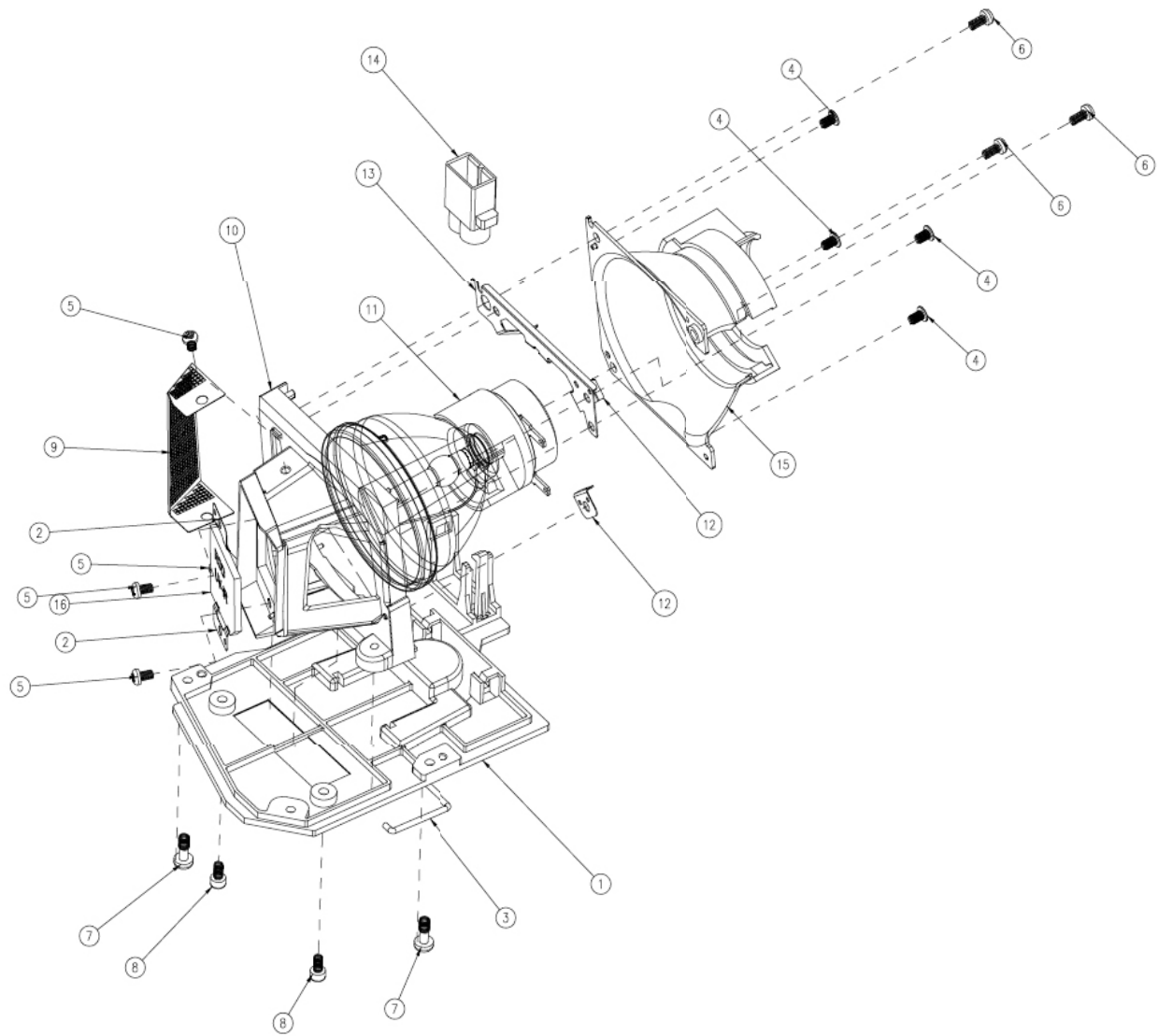
Item	P/N	Description	Parts Supply
	70.8JA18GR01	ASSY IO COVER MODULE FOR EW610ST(SERVICE)	V
1	75.8JA01G001	BUY ASSY BACK COVER EW610ST	
2	49.8EF01G002	SPEAKER 5W 8-OHM EW610ST (For EW610ST&EX610ST)	V
	49.87K01G201	SPEAKER 8ohm 2W Φ16 EP752 G201 (For EW605ST&EX605ST)	V
3	51.8AY42G001	MYLAR FOR BACK COVER 7609WU	
4	51.8GL12G003	SPEAKER NONWOVEN S300	
5	52.8GL10G001	SPEAKER PORON S300W	
6	61.00092G001	SPEAKER SHOULDER SCREW M3x7 NYLOK	
		EW610ST/EX610ST/EW605ST/EX605ST	Confidential 6

Assy Top Cover Module



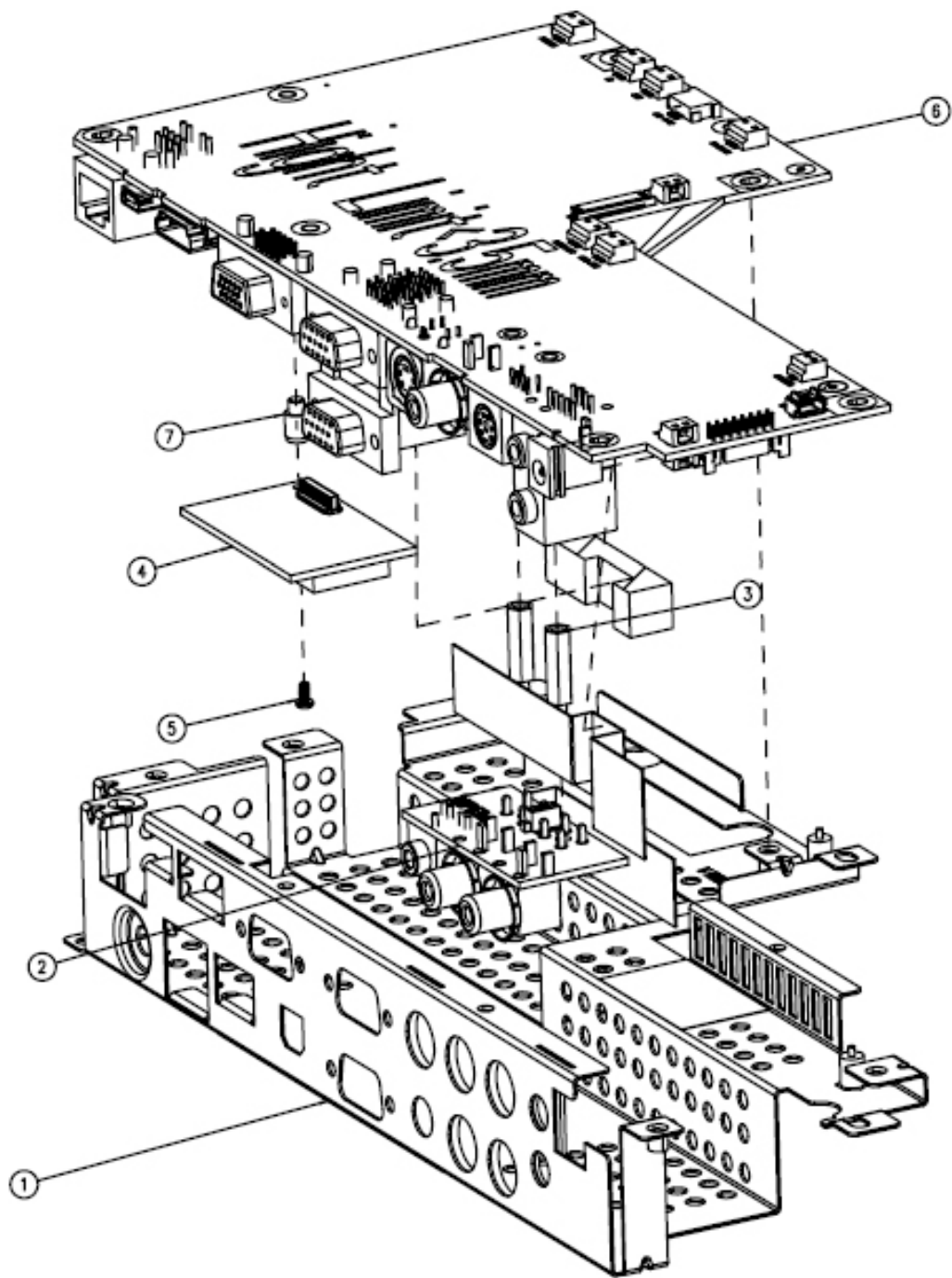
Item	PN	Description	Parts Supply
1	85.0A123G050	SCREW P/F MECH M3*5 Ni	
2	85.1A123G050	SCREW PAN MECH M3*5 Ni	
3	75.8GL08G001	BUY ASSY ZOOM RING CLAMP S300W	
4	51.8GL06H001	ZOOM RING PC GII	
5	75.8HG01G011	BUY ASSY TOP COVER EW610ST	V
6	51.8JA03G001	KEYPAD MYLAR FOR EW610ST	
7	80.8HG03G001	PCBA KEYPAD BD FOR BX286-SD PROJECTOR	V
8	75.8HG02G011	BUY ASSY KEY BUTTON EW610ST	
9	41.85A06G001	EMI GASKET / 10*1*20	
10	42.00300G001	CABLE FFC 24P P=0.5 150mm KEYPAD 3400MP	

Assy Lamp Module



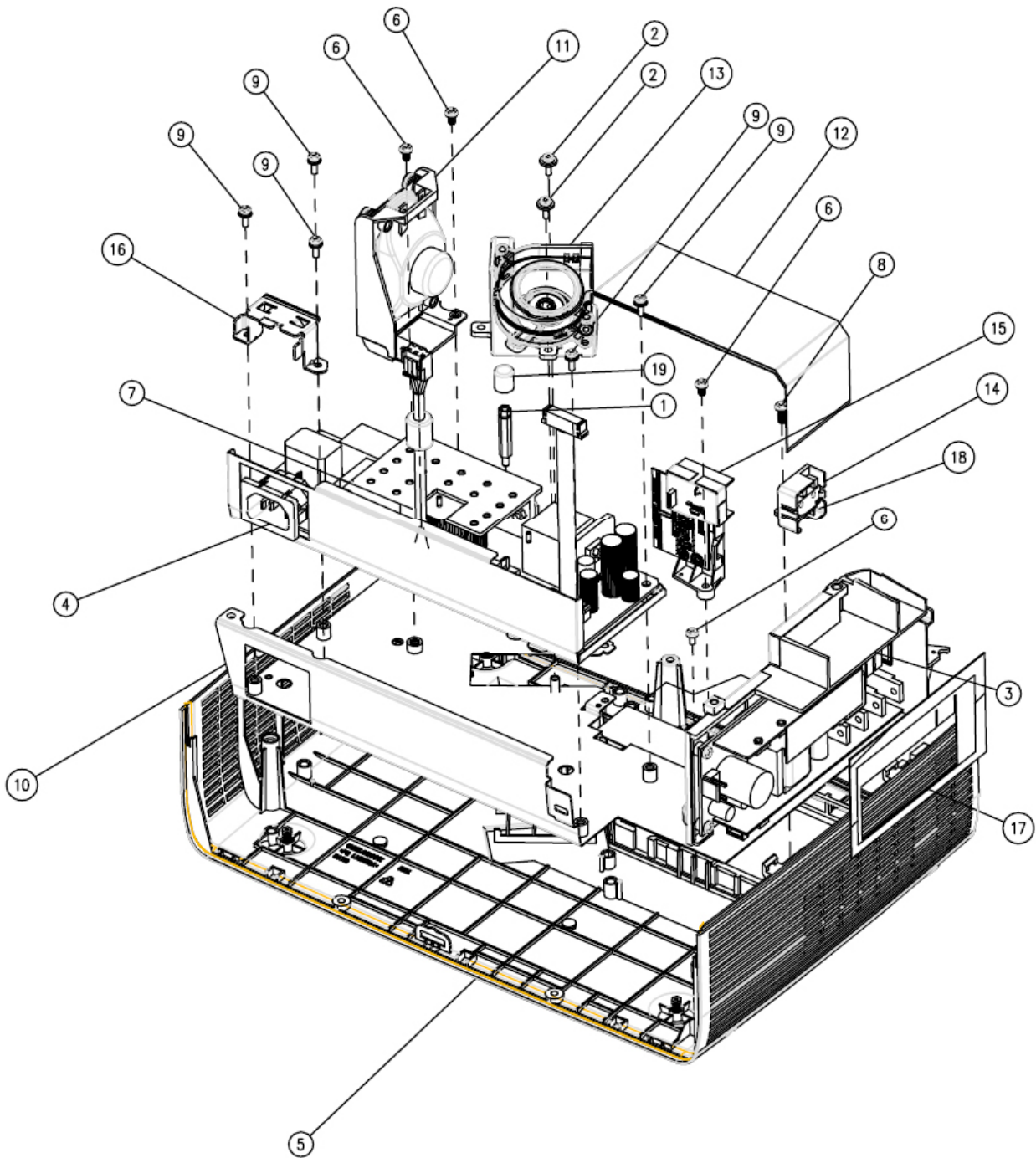
Item	P/N	Description	Parts Supply
	70.8JA20GR01	ASSY LAMP COVRE MODULE FOR EW610ST(SERVICE)	V
1	51.8GL10H001	LAMP CLAMP TOP P1266	
2	61.80L06G001	UVIR SPRING PLATE SUS301 80L	
3	61.86808G002	LAMP CHANGER HANDLE SUS304 1.6d DP725 FOR CPC	
4	85.0A126G040	SCREW DOUBLE FLAT MECH M2.6*4Ni	
5	85.1A126G040	SCREW PAN MECH M2.6*4 Ni	
6	61.00061G001	LOCK SCREW PAN MECH M3*8.5-3.5 Ni	
7	85.71626G050	SCREW SOCKET MECH M2.6*5 BLACK NYLOK	
8	61.88T11G011	LAMP MESH SUS301-1/2H 0.2t P1266	
9	61.8EG12G001	LAMP HOLDER FOR OSRAM E20.8 HD20	
10	23.8BW15G004	OSRAM LAMP E20.8/0.8 230W WITH TIP WIRE 90 DEGREE ANS OPTIMIZED BURNER	
11	61.8BA07G001	LAMP CLAMP BOTTOM P1266	
12	61.8BA06G001	LAMP CLAMP TOP P1266	
13	42.0043QG001	W.A. 2P #20 UL3782 114/110mm PHILES E20.9 LAMP PDG-DSU30	
14	75.8CP03G001	ASSY LIGHTCUT MODULE X1161	
15	23.88N10G001	UV-IR 24*25*2mm(5*5mm cut)_Add Dot ink mark-Oerlikon	

Assy Main Board Module



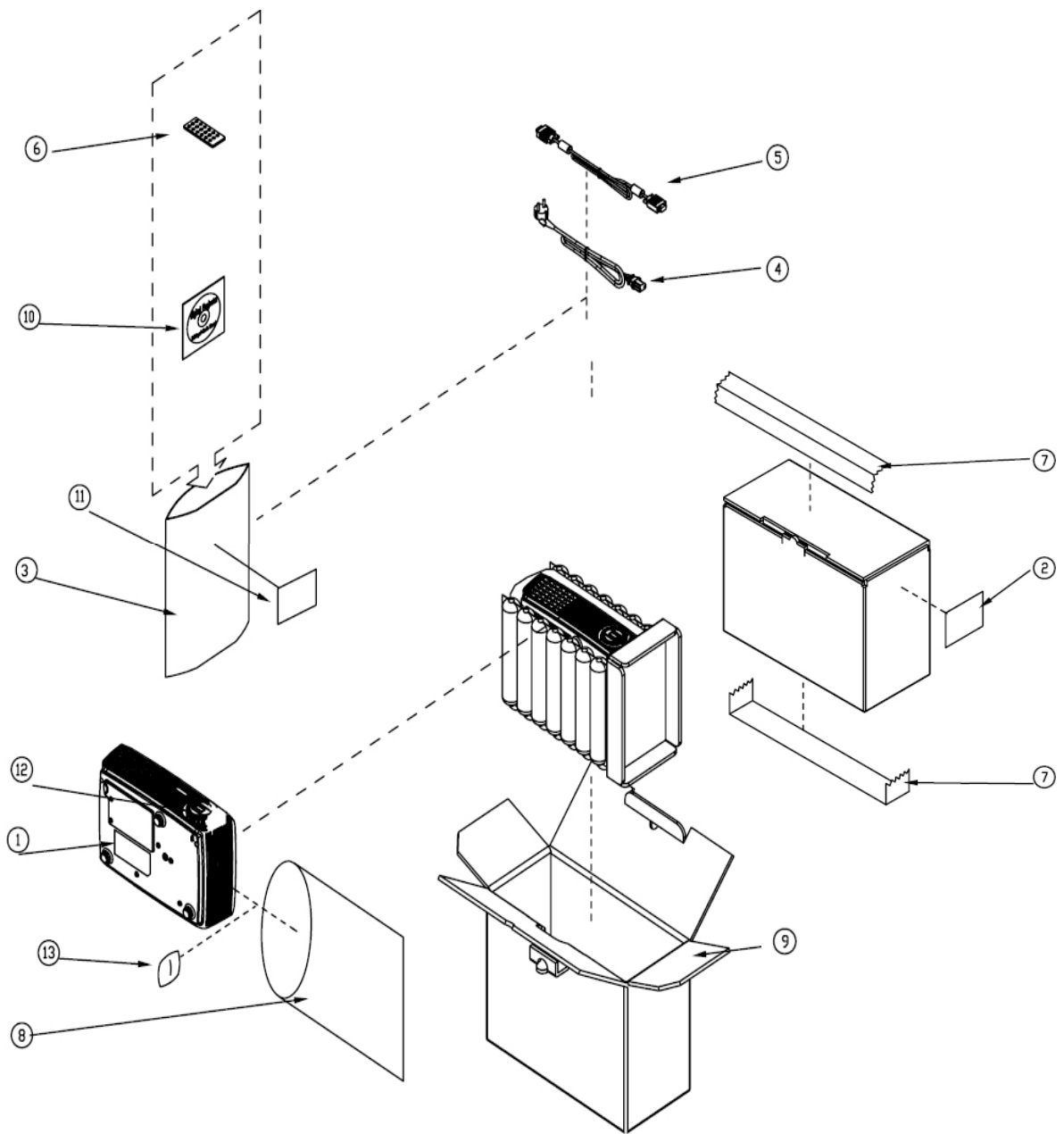
Item	P/N	Description	Parts Supply
1	75.8GL09G001	BUY ASSY M/B TOP SHIELDING S300W	
2	80.8GL06G001	PCBA AUDIO DAUGHTER BD FOR GENERIC II (For EW610ST&EX610ST)	V
3	61.00069G001	HEX SCREW L=16 M3 Cu 2300MPX	
4	80.8JA08G001	PCBA LAN MODULE BOARD FOR EW610ST [PROJECTOR](For EW610ST&EX610ST)	V
5	85.1A322G030	SCREW PAN MECH M2*3 BLACK GREEN	
6	80.8JA01G001	PCBA MAIN BD FOR EW610ST [PROJECTOR]	V
7	61.000B1G001	STAND OFF H6 M2 Sn S300w	
8	85.1A123G050	SCREW PAN MECH M3*5 Ni	
9	52.8GL06G001	HDMI PORON S300W	
10	51.8GL15G001	MAIN BD MYLAR 0.43t S300W	
11	52.8GL05G001	RJ45 PORON S300W	
12	51.8GL26G001	AUDIO BD MYLAR 0.43t S300W	

Assy Bottom Cover Module



Item	P/N	Description	Parts Supply
1	61.000B4G001	HEX SCREW L=26.5 M3-M3 Cu	
2	61.00029G001	SCREW PAN MECH M3*5*D8 Ni	
	70.8JA19GR01	ASSY OSRAM LAMPDRIVER MODULE FOR EW610ST(SERVICE)	V
3	70.8JA08G001	ASSY LAMP DRIVER MODULE EW610ST	
4	75.8FC01GP01	ASSY MATRITEK LVPS FOR EH1020 12V/6A(AC INLET)	V
5	75.8GL06G011	BUY ASSY BOTTOM COVER EW610ST	V
6	85.1A123G050	SCREW PAN MECH M3*5 Ni	
7	85.1C224G051	SCREW PAN MECH M4*5 COLOR W/TOOTH WASHER Cr3+	
8	85.WA326G080	SCREW PAN TAP M2.6*8 BLACK	
9	85.1C123G060	SCREW ISO M3*6mm NI PH W/LW BFA	
10	61.8EG01G031	BOTTOM SHIELDING T=0.6MM EH1020	
11	49.8EF01G002	SPEAKER 5W 8-OHM EW610ST (For EW610ST&EX610ST)	V
12	41.8GL03G001	EMI Gasket W6xH1.5xL180	
13	49.8EF04G001	SUNON 45*20mm GB1245PKVX-8 F-TYPE BLOWER	V
14	51.89W18G001	LIMIT SWITCH HOLDER PC MN3600H BLACK TDP-SP1	
15	70.8GL11G001	ASSY FRONT IR MODULE S300W	
16	61.88T19G001	AC INLET BRACKET FOR X1160E	
17	51.8GL14G001	MYLAR BOTTOM RIGHT SIDE FRPP S300W	
18	75.8AA04G001	BUY ASSY INTERLOCK SWITCH 1409X	V
19	52.8CF01G001	STAN OFF CAP 4210X	

AK



Item	P/N	Description	Parts Supply
1	DC.8JA01G001	D.C. EW610ST	
2	35.52302G091	LABEL CARTON 108*92 BLANK	
3	51.86213G002	PE BAG ZIPPER #9 W/RECYCLING MARK FOR OPTOMA	
4	42.50115G001	CABLE POWER CORD 1.8M SP30+IS14 US	V
5	42.00200G005	CABLE VGA 15P 1.8M BLK EP739	V
	SP.80N06GC02	CABLE VGA 15P 1.8M BLK EP739 OPTOMA	V
6	45.8JA01G001	REMOTE CONTROL OF EW535ST/EX545ST WITHOUT LASER (3D)	V
	SP.80N03GC01	CABLE POWER CORD 1830mm SP30+IS14;BC-PUPIX01	V
7	51.0000AG011	PACKING TAPE 72MM FOR OPTOMA	
8	51.00187G001	BUBBLE BAG 360x480+40	
9	55.8JA01G001	CUSHION EPE LEFT EW610ST	V
10	36.8JA01G001	USER'S GUIDE MULTILINGUAL OPTOMA EX610ST/EW610ST	V
	36.8JA01G011	USER'S GUIDE MULTILINGUAL (CD) EW605ST/EX605ST	V
11	35.82001G111	AK LABEL 3"*3" BLANK	
12	75.8JA04G001	BUY ASS LENS CAP EW610ST	V
13	57.00001G001	PACK SIO2 DRIER 20g	

Appendix B

I. Serial Number System Definition

Serial Number Format for Projector (take EW610ST as example)

Q **8JA** **0** **15** **AAAAA** **C** **0001**

① ② ③ ④ ⑤ ⑥ ⑦

- ① : **Q = Optoma**
- ② : **8JA = Project Code (EW610ST)**
- ③ : **0 = Last number of the manufacture year (ex:2010 = 0)**
- ④ : **15 = week of the manufacture year (ex:the fifteenth week of the year = 15)**
- ⑤ : **AAAAA = not-defined**
- ⑥ : **C = Manufacture factory (CPC)**
- ⑦ : **0001 = Serial Code**

EX: Q8JA015AAAAAC0001

This label "Q8JA015AAAAAC0001" represents the serial number for EW610ST. It is produced at CPC on fifteenth of 2010. Its serial code is 0001.

II. PCBA Code Definition

PCBA Code for Projector

A B XXXXXXXXXX C XXX EEEE

① ② ③ ④ ⑤ ⑥

- ① : ID
- ② : Vendor Code
- ③ : P/N
- ④ : Revision
- ⑤ : Date Code
- ⑥ : S/N